

menced by one jungle-cock, is answered by every other within hearing; then, with hostile intent and alternate sounds of defiance, they gradually advance to their morning combat; they are even more pugnacious than their domestic brethren; and I have seen jungle-cocks, when replied to (apparently in a very different dialect) from the fowl-yard, advance within its precincts, and give battle to its champions. In taste their flesh resembles that of the pheasant: in appearance, the males are like the common red dunghill-cock, only with more glossy plumage, and a yellow spot in the centre of the red upright comb; the female is much smaller, and in colour resembles the heath-hen of the moors."

I know the species referred to by Major Forbes, and suspect it is that named *G. Lafayettei*; being distinct from that of which the hen is figured in Hardwicke's 'Illustrations' by the name *G. Stanleyi*, and which inhabits more elevated ground. The habits portrayed are very decidedly those of a polygamous species; and (equally with those before cited, of *G. ferrugineus*) vividly recal to mind those of the British pheasant. And *G. Sonneratii* will answer and defiantly crow against a common fowl, however widely different its voice, the same as the Ceylon species; at least I speak of *G. Sonneratii* when tamed, but not domesticated, and which if he breaks loose is most readily recaptured by putting out a common domestic cock to entice him to combat.

P. 393. Is not *Turdus rufulus*, Drapiez, vel *modestus*, Eyton, identical with *T. javanicus*, Horsfield, vel *concolor*, Temminck?

As regards the *Lanius phœnicurus* and *L. superciliosus*, I may repeat my observation that the colouring characteristic of the latter is peculiar to the Malayan bird, common as *L. phœnicurus* is throughout India; but that what I now consider to be females or young males of the former are undistinguishable from the Indian *L. phœnicurus*. *L. tigrinus* is distinct altogether: and I may remark that I have lately described a beautiful new shrike from the Tenasserim provinces, which is very nearly allied to *L. Hardwickii*.

BIBLIOGRAPHICAL NOTICES.

Recherches sur les Animaux Fossiles, par L. DE KONINCK. Liège, 1847.

(*Première Partie, Monographie des Genres Productus et Chonetes.*)

THIS is the first of a series of works entitled 'Researches on Fossil Animals,' containing monographs of the genera *Productus* and *Chonetes*. These works are intended to supply the geologist and naturalist with complete monographs of different genera, so as to embody in one volume all the species of a genus which are now more or less distributed through many periodicals, memoirs and transactions of Societies. The first part contains a list of 107 works and memoirs to which the author has referred in the subsequent pages. To this

succeeds an historical introduction and observations on the generic characters, with a classification of the species. A detailed description of each species is given, to which is appended a very complete synonymy. From the geologic and geographic distribution which follows we extract a few notes. The number of species of *Productus* described amounts to 62, of which 4 are Devonian, 47 Carboniferous, 10 Permian, and 1 Triassic. Of the 47 Carboniferous species 35 only are found in the lower divisions, viz. :—

<i>P. striatus.</i>	<i>P. proboscideus.</i>	<i>P. costatus.</i>	<i>P. fimbriatus.</i>
— <i>giganteus.</i>	— <i>genuinus.</i>	— <i>subquadratus.</i>	— <i>Buchianus.</i>
— <i>latissimus.</i>	— <i>Nystianus.</i>	— <i>brachythærus.</i>	— <i>Deshayesianus.</i>
— <i>flexistria</i>	— <i>Medusa.</i>	— <i>spinulosus.</i>	— <i>marginalis.</i>
— <i>mammatus.</i>	— <i>plicatilis.</i>	— <i>Villiersi.</i>	— <i>granulosus.</i>
— <i>arcuarius.</i>	— <i>Griffithianus.</i>	— <i>tessellatus.</i>	— <i>Orbignianus.</i>
— <i>porrectus.</i>	— <i>sublævis.</i>	— <i>Humboldtii.</i>	— <i>Verneuillianus.</i>
— <i>undatus.</i>	— <i>Boliviensis.</i>	— <i>pyxidiformis.</i>	— <i>Christiani.</i>
	— <i>expansus.</i>	— <i>Leuchtenbergensis.</i>	

Not any species belongs exclusively to the middle division, although 7 are common to the lower and middle portions, viz. *P. margaritaceus*, *undiferus*, *Flemingii*, *pustulosus*, *Keyserlingianus*, *aculeatus*, *mesolobus*. The *P. carbonarius* is found only in the upper division. The *P. Cora*, *semireticulatus*, *scabriculus* and *punctatus* appear to have lived from the commencement to the close of the carboniferous period.

It is interesting to observe that all the Devonian species have common general characters, and may be arranged in the same group (*Caperati*); a similar remark also applies to the Permian species, which, with the exception of three, are nearly all comprised in the group (*Horridi*), so that the latter group is almost composed of Permian species, the *P. Orbignianus*, *P. Verneuillianus*, being the only carboniferous forms; and it is not a little singular, in consulting the table of classification (page 29), to find that the Permian species have a much greater affinity with the Devonian than with the carboniferous, notwithstanding the considerable period which must have elapsed between their development.

Under the geologic distribution of the genus *Chonetes* we find there are 23 species known at present, which number may probably be increased when the fossiliferous deposits of America, New Holland and Asia are more explored. Nevertheless the geological results to which the known species lead us are deserving of notice. From the observations of M. de Koninck it appears (contrary to the opinion generally admitted), that with the exception of one, not any of the 23 species pass from one system to another, or even from the lower to the upper beds of the same system.

The following table shows their distribution in the different parts of the palæozoic series :—

Silurian.	Devonian.	Carboniferous.	Permian.
<i>C. striatella.</i>	<i>C. Falklandica.</i>	<i>C. concentrica.</i>	<i>C. variolata??</i>
— <i>cornuta.</i>	— <i>sarcinulata.</i>	— <i>papilionacea.</i>	
	— <i>dilatata.</i>	— <i>comoides.</i>	
	— <i>crenulata.</i>	— <i>Shumardiana.</i>	
	— <i>nana.</i>	— <i>Dalmaniana.</i>	
	— <i>setigera.</i>	— <i>sulcata.</i>	
	— <i>armata.</i>	— <i>Buchiana.</i>	
	— <i>minuta.</i>	— <i>tuberculata.</i>	
	— <i>convoluta.</i>	— <i>variolata.</i>	
		— <i>elegans.</i>	
		— <i>Laguessiana.</i>	
		— <i>perlata.</i>	

From the inspection of the above table, it appears that the genus *Chonetes* attained its greatest development in the carboniferous system; it is there also that the species present many varieties of form and are of the greatest size. This latter remark applies also to *Productus*, to which *Chonetes* is closely allied. However, the proportion in which this development has taken place is very different for the two genera. With regard to their distribution in time, the following conclusions are drawn from the table above quoted: the two Silurian species belong to the upper beds of the system; in the Devonian system the *C. Falklandica*, *sarcinulata* and *dilatata* characterize the inferior beds, the *C. crenulata*, *nana* and *setigera* are characteristic of the middle portion, and the *C. armata*, *minuta* and *convoluta* are found only in the upper beds of the same system. The *C. concentrica*, *papilionacea*, *comoides*, *Shumardiana*, *Dalmaniana*, *sulcata*, *Buchiana* and *tuberculata* belong exclusively to the inferior beds of the carboniferous system, the *C. elegans* to the middle, and the *C. Laguessiana* and *perlata* to the superior beds of the same system; and lastly, the *C. variolata* belongs to different carboniferous deposits, and appears even to pass into the Permian system.

In a memoir of this nature, it is almost impossible to attain absolute correctness, more especially from the author not having had the means of verifying all the species from original or well-authenticated specimens; independently, however, it is a work of great research, and will be of considerable value to the palæontologist, in placing before him carefully executed figures of the species belonging to these two genera. The volume is in quarto, illustrated by 20 plates, and contains also an alphabetical, synonymical and chronological table of all the species.

Monographia Heliceorum Viventium, sistens Descriptiones systematicas et criticas omnium hujus familiæ generum et specierum hodie cognitarum. Auctore LUDOVICO PFEIFFER, Dr. Cassellana. Fasc. 1, 2, 3. Lipsiæ, 1847-48.

It is with great pleasure we announce the appearance of the completion of the first volume of this excellent monograph, containing